

What is claimed:

1. A system for calculating an angle between an articulated tractor and trailer, comprising:
 - 5 a plurality of transducers arranged on said tractor substantially symmetrically about a centerline of a substantially straight line and oriented towards said trailer, each transducer operable to transmit and receive signals and having an angular orientation substantially dissimilar to adjacent transducers of said plurality of transducers on a same side of said centerline; and
 - 10 a control circuit operative to control said plurality of transducers to determine said angle, wherein said control circuit sequentially activates ones of said plurality of transducers such that only a single transducer of said plurality of transducers transmits signals at any given time and said control circuit only processes a return signal received by an emitting transducer.
- 15 2. The system of claim 1, wherein said tractor has a rotatable side view mirror and further including a drive unit for rotating said rotatable side view mirror based on the determined angle.

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3. The system of claim 1, wherein said plurality of transducers are arranged on a transducer bar, said transducer bar attached to said tractor.
4. The system of claim 1, wherein said plurality of transducers equals six in number.
5. The system of claim 1, wherein said control circuit is operable when said tractor and said trailer are separated in a range from about 40 to about 53 inches when said angle is a zero degree angle.
6. The system of claim 1, wherein said each transducer transmits signals in a beamwidth of about twenty-five degrees.
7. The system of claim 1, wherein said plurality of transducers equal six in number and are arranged on a transducer bar, said transducer bar attached to said tractor.
8. The system of claim 7, wherein two transducers of said plurality of transducers each occupy a terminal end of said transducer bar.
9. The system of claim 8, wherein said two transducers each have an angular orientation with said transducer bar of about fifty-six degrees.

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10. The system of claim 7, wherein two transducers of said plurality of transducers each exist substantially near said centerline.
11. The system of claim 10, wherein said two transducers each have an angular orientation with said transducer bar of about eighty-three degrees.
12. A method of calculating an angle between an articulated tractor and trailer, comprising:
 - arranging a plurality of transducers on said tractor substantially 5 symmetrically about a centerline of a substantially straight line, each transducer having an angular orientation substantially dissimilar to adjacent transducers of said plurality of transducers on a same side of said centerline;
 - orienting said plurality of transducers towards said trailer such that 10 each transducer is operable to transmit signals to said trailer and receive signals reflected from said trailer;
 - controlling said plurality of transducers to sequentially activate such that only a single transducer of said plurality of transducers is transmitting at any given time, said single transducer being an emitting transducer;
 - 15 processing signals received only by said emitting transducer; and calculating said angle.

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13. The method of claim 12, wherein said tractor has a rotatable side view mirror, further including rotating said side view mirror in accordance with said calculated angle.
14. The method of claim 12, wherein said controlling said plurality of transducers further includes activating said emitting transducer for about 10 msec.
15. The method of claim 12, wherein said arranging said plurality of transducers on said tractor further includes arranging said plurality of transducers on a transducer bar.
16. The method of claim 15, further including attaching said transducer bar to said tractor.
17. The method of claim 15, further including arranging two transducers each at a terminal end of said transducer bar and arranging two transducers substantially near said centerline.
18. The method of claim 17, further including arranging said two transducers at said terminal ends with an angular orientation relative to said transducer bar of about fifty-six degrees.

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19. The method of claim 17, further including arranging said two transducers near said centerline with an angular orientation relative to said transducer bar of about eighty-three degrees.

20. The method of claim 12, further including calibrating said plurality of transducers.

21. The method of claim 12, further including calculating a mirror position of a rotatable side view mirror of said tractor.

22. The method of claim 21, further including rotating said rotatable side view mirror from a zero position by an amount equivalent to said mirror position.

23. A transducer bar having a longitudinal extent and a centerline for attaching to a tractor to facilitate in calculations of an angle between said tractor and a trailer articulated together during use, comprising a plurality
5 of transducers arranged substantially symmetrically about said centerline, each transducer having an angular orientation relative to said longitudinal extent substantially dissimilar to adjacent transducers on a same side of said centerline, wherein an innermost transducer and an outermost

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transducer on said same side angle in opposite directions relative to said centerline.

24. The transducer bar of claim 23, wherein said angular orientation of said outermost transducer is about fifty-six degrees.

25. The transducer bar of claim 23, wherein said angular orientation of said innermost transducer is about eighty-three degrees.

26. The transducer bar of claim 23, wherein said angular orientation of said innermost transducer is substantially larger than said angular orientation of said outermost transducer.

27. The transducer bar of claim 23, wherein an intermediate transducer between said innermost transducer and said outermost transducer angles in a same direction as said outermost transducer.

28. The transducer bar of claim 27, wherein said intermediate transducer exists substantially closer to said outermost transducer than said innermost transducer.

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29. The transducer bar of claim 27, wherein said angular orientation of said innermost transducer is substantially larger than said angular orientation of said intermediate transducer.

30. The transducer bar of claim 29, wherein said angular orientation of said intermediate transducer is substantially larger than said angular orientation of said outermost transducer.

31. The transducer bar of claim 30, wherein said angular orientation of said innermost transducer is about eighty-three degrees, said angular orientation of said intermediate transducer is about sixty-nine degrees and said angular orientation of said outermost transducer is about fifty-six
5 degrees.

32. The transducer bar of claim 23, further including a plurality of housings that angularly hold said each transducer relative to a surface of said transducer bar.

33. A system for calculating an angle between an articulated tractor and trailer, comprising:

a plurality of transducers arranged on said tractor, each transducer operable to transmit and receive signals; and

a control circuit operative to control said plurality of transducers, wherein said control circuit activates ones of said plurality of transducers such that only a single transducer of said plurality of transducers transmits signals at any given time and said control circuit only processes a return signal received by said single transducer.

34. The system of claim 33, wherein said tractor has a rotatable side view mirror and further including a drive unit for rotating said rotatable side view mirror based on said angle.

35. The system of claim 34, wherein said plurality of transducers are calibrated.

36. The system of claim 34, wherein said drive unit rotates said rotatable side view mirror from a zero position by an amount equivalent to a mirror position.

37. The system of claim 33, wherein said plurality of transducers are arranged substantially symmetrically about a centerline of a substantially linear transducer bar and oriented towards said trailer, each transducer having an angular orientation substantially dissimilar to adjacent

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transducers of said plurality of transducers on a same side of said centerline.

38. The system of claim 37, said transducer bar further including an innermost transducer and an outermost transducer on said same side that angle in opposite directions relative to said centerline.